(No Model.) 2 Sheets—Sheet 1.

R. B. GILCHRIST.

CORK EXTRACTOR.

No. 392,116. Patented Oct. 30, 1888.

Fig. 3.

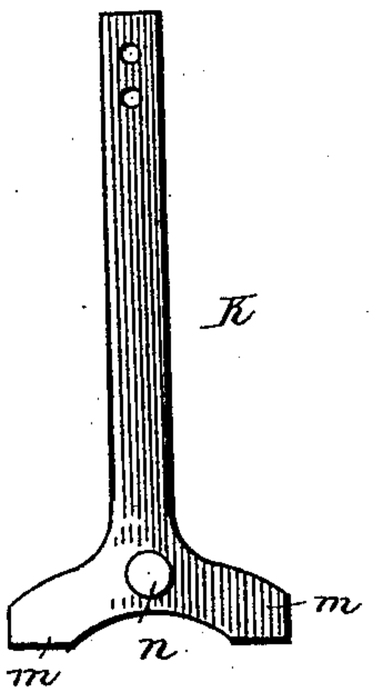

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

R. B. GILCHRIST.

CORK EXTRACTOR.

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Fig. 2.

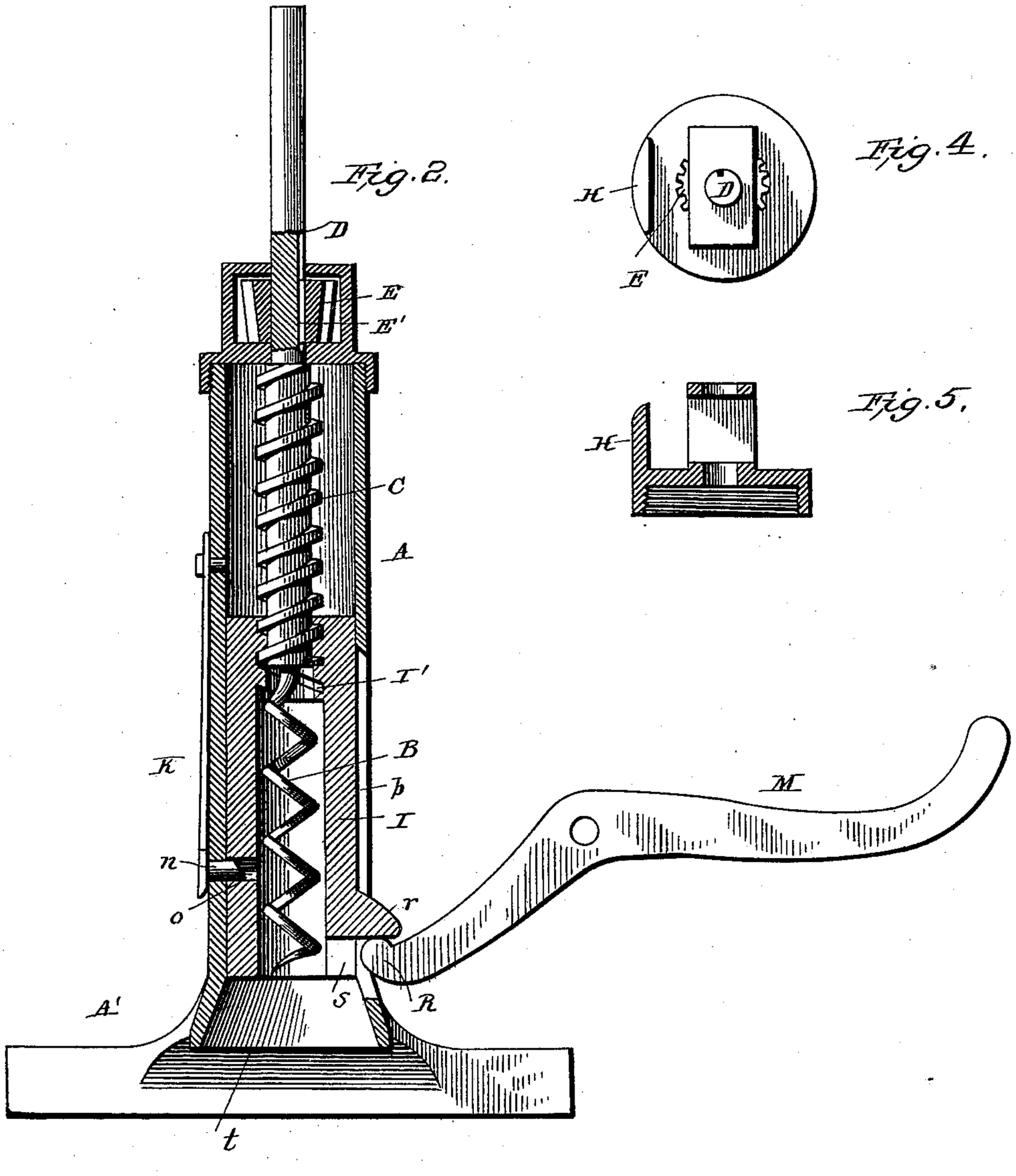

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

RAYMOND B. GILCHRIST, OF JERSEY CITY, NEW JERSEY.

CORK-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 392,116, dated October 30, 1888.

Application filed May 19, 1888. Serial No. 274,382. (No model.)

To all whom it may concern:

Be it known that I, RAYMOND B. GILCHRIST, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Cork-Extractors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates, generally, to the class of cork-extractors in which the operation of drawing the cork is assisted by the employment of a lever, these devices being distinguished as power cork-extractors; and my present invention is in the nature of an improvement upon the cork-extractor for which I made application for Letters Patent on January 5, 1888, Serial No. 259,829, since patented to me June 19, 1888, No. 384,839.

As in the case of the construction described in the above-named application for Letters Patent, the principal purpose of the invention is to provide a means whereby the operation of driving the corkscrew into the cork and extracting the cork is accomplished with a single movement of the lever; further, to provide for the removal of the cork from the corkscrew during the same operation; and the general principle of operation of the present construction is similar to that of my previous construction above named. I have found, however, that certain features of detail may be varied to advantage, and it is the purpose of my present application to cover by Letters Patent certain desirable improvements upon the details of construction found in my previous device.

To this end my invention consists, as before, in the hollow standard or cylinder supporting the corkscrew, having a screw-threaded extension located centrally within the standard, the pinion supported at the upper end of the standard and splined in a groove on the extension of the corkscrew, whereby the latter revolves with the pinion, but has an independent vertical movement, a sliding nut surrounding the corkscrew within the cylinder, with screw-threads engaging the screw-threads on the corkscrew-extension, and a lever pivoted at the lower end of the standard and carrying a curved rack-bar meshing with the pinion. Except for certain modifications presently described, the parts mentioned are similar to those of my previous construction. Whereas, however, in the previous device the operation of raising the corkscrew was effected by the action of the lever upon a connection with the extension of the corkscrew, raising the latter, and with it the nut, in the present device the connection is made with the nut, raising the latter, and with it the corkscrew, this departure marking the most important difference between the two constructions.

My invention further consists in certain details of construction, combination, and arrangement of parts, as hereinafter set forth.

In the drawings, Figure 1 is a view of my device in elevation. Fig. 2 is a central vertical section of the standard, showing the internal arrangement of parts. Fig. 3 is a detached view of the spring-catch which engages the sliding nut; and Figs. 4 and 5, a plan and vertical sectional view, respectively, of the cap of the standard.

A is the hollow standard or cylinder, mounted on the base A′, and having the lower flaring part, *t*, to receive the bottle-neck.

B is the corkscrew, provided with the extension shown, the middle part, C, of which is screw-threaded, while the upper part, D, is provided with a groove extending to the upper end thereof.

E is a pinion supported on the top of the standard A, and surrounding the part D of the extension, provided with the internal spline, E′, engaging the groove in said extension.

F is the handle or lever, pivoted near the lower end of the standard and carrying the curved rack-bar G, engaging the pinion E.

All the foregoing parts are similar to the corresponding parts of my previous construction, except in the form of the lever F, and in that instead of forming the rack-bar G as a yoke with a twin plane bar I provide on the cap of the standard a guide-pin, H, between which and the pinion E the rack-bar moves. Instead of the pin, an ordinary friction-roller may be employed. An important advantage of this modification is the saving of metal and the facility for casting the pinion-support and rack-bar guide in one piece with the cap.

Moving vertically within the standard A is

the nut I, made with an internal bore and provided with internal screw-threads, I', in its upper part, to engage with the screw-threads formed upon the part C of the extension. At one side the lower part of the nut I is recessed, as at *s*, and provided with an outwardly-extending stop, *r*, which projects through a slot, *p*, formed in the wall of the standard A in the lower half of the latter. The wall of the nut I is also recessed or perforated, as at *o*, to receive the projecting pin *n* of the spring-catch K, secured to the outer wall of the standard, as shown. The spring-catch K is provided with one or two wings, *m*. Pivotally supported on the bearing L, mounted on the standard, is a bent arm, M, approximating a bell-crank lever, the inner end, *h*, of which enters the slot *p* in the wall of the standard, between the lower end thereof and the stop *r*, formed on the nut I.

The operation is as follows: The pin *n* being maintained in the recess *o* by the pressure of the spring-catch K, the nut is prevented from moving, and a downward movement of the lever F, revolving the pinion through the medium of the rack-bar G, screws down the corkscrew into the cork. When, in its upward movement, the cam-extension F' of the lever comes in contact with the wing *m* of the spring-catch K, it forces the pin *n* out of the recess *o*, thus releasing the sliding nut I. At the same time the lever impinges against the outer end of the bent arm M, raising the inner end of the latter, and with it the nut. This operation raises the corkscrew and extracts the cork. While the nut is being raised the corkscrew continues to revolve by reason of the engagement of the rack and pinion. Upon the return of the lever F the corkscrew is turned in a reverse direction, and the pressure on the bent arm M being relieved causes the nut to fall, assisted by gravity, until the spring-actuated pin *n* enters the recess *o*, this combined operation serving to withdraw the corkscrew from the cork and force the latter out of the standard.

A comparison of the present improvement with the construction illustrated in my previous application will show that certain details found in the latter can be used in the improvement; and it is furthermore obvious that changes in form, construction, and arrangement of details may be made without departing from the principle of operation. Thus the spring-catch K may be replaced with the internal arrangement shown in the previous construction for the same purpose, or the location of the spring-catch may be varied; or other well-known mechanical devices may be used to enable the lever to raise the sleeve at the proper time, as by connecting the arms found in the previous application to the sleeve by pins passing through slots in the standard. Such minor alterations and changes, whether in the nature of the adaptation of details of my former construction or details well known to mechanics for a similar function, are included within the broad scope of my invention and claims.

What I claim as new, and desire to secure by Letters Patent, is—

1. A cork-extractor comprising in combination a standard, a sliding nut within the same, a corkscrew having a screw-threaded extension and moving within said sliding nut, a pivoted lever, a connection between the lever and the corkscrew, whereby the movement of the lever will revolve the latter, and a lifting-arm in contact with the sliding nut and with the lever in part of its throw, whereby the lever shall in part of its throw operate to raise said nut, and with it the corkscrew, as set forth.

2. A cork-extractor comprising in combination a standard, a sliding nut, a corkscrew having a screw-threaded extension moving within said sliding nut, means for revolving said corkscrew, a pivoted arm engaging the lower end of said sliding nut, and a pivoted lever connected with the means for revolving the corkscrew, and acting in part of its throw upon the pivoted arm, to cause the latter to raise the sliding nut, and with it the corkscrew, as described.

3. A cork-extractor comprising in combination a standard, a sliding nut, a spring-actuated pin to lock said sliding nut, a corkscrew within said sliding nut and having a screw-thread connection therewith, means for revolving the corkscrew, a pivoted arm engaging the lower end of said sliding nut, and a pivoted lever operating in part of its throw to release the spring-actuated retarding-pin to disengage the nut, and acting upon the free end of the pivoted arm, to cause the latter to raise the nut, and with it the corkscrew, as described.

4. A cork-extractor comprising in combination a standard provided with a slot in part of its length, an internal sliding nut having a projection passing through the slot in the standard, a corkscrew having a screw-threaded extension engaging with screw-threads in the sliding nut, a rack and pinion operating to revolve the corkscrew, a pivoted arm engaging the projection on the sliding nut, and a pivoted lever operating the rack and pinion, and in part of its movement acting against the pivoted arm, to cause the latter to raise the sliding nut, and with it the corkscrew, as set forth.

5. A cork-extractor comprising a sliding nut, a spring-actuated retarding-pin, a corkscrew having an extension screw-threaded in its lower part and grooved in its upper part, a pinion splined in the groove in the upper part of the extension, a pivoted lever carrying a curved rack engaging the pinion and provided with a cam projection in its lower end, to engage and release the spring-actuated retarding-pin mounted on the standard, and a pivoted arm engaging the lower end of the sliding nut, its free end being in the line of movement of the pivoted lever, whereby the movement of the lever in one direction oper-

ates to revolve the corkscrew and force it into the cork, and then to release the retarding-pin and to actuate the pivoted arm to raise the sliding nut, and with it the corkscrew, while the return movement of the lever operates to withdraw the corkscrew from the cork, and the fall of the sliding nut forces the cork away, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

RAYMOND B. GILCHRIST.

Witnesses:
SCHUYLER DURYEE,
N. A. ACKER.